

Abstract of the Disclosure

The present invention is directed to compounds effective for increasing the water solubility of poorly soluble drugs. Hydrotropic agents are identified, such as for increasing the solubility of paclitaxel. Polymerizable monomers of the hydrotropic agents are prepared and hydrotropic polymers formed from such monomers are generated. Both the monomers and resulting polymers increase the solubility of poorly soluble drugs. In some cases, the hydrotropic polymers are more effective at increasing solubility at low concentrations relative to a corresponding amount of the hydrotropic agent precursor.

Additionally, the hydrotropic polymers (hytrops) can be crosslinked to yield hydrotropic hydrogels (hydrogels) capable of solubilizing a drug. The hydrogels can further be employed to generate micro- and nano-particle suspensions of a poorly soluble drug. The water solubility of paclitaxel can be increased by four orders of magnitude using compounds of the invention. Large molecular weight compounds, such as the hytrops and hydrogels, are expected to have low levels of absorption in the gastrointestinal tract, thereby making them particularly preferred for oral delivery of poorly soluble drugs.